

The preface and introduction show that the authors thoroughly appreciate the difficulties before them, and are determined to spare no pains to make their work as useful as possible; and though they have, from their inability to examine the types, been obliged temporarily to adopt many species about which they evidently have grave doubts, yet a new edition will no doubt enable these supposed species to be relegated to their proper position. The authors' opinion on this important question may be quoted as follows:—

"With regard to species and varieties we have found it convenient to describe where there is any room for doubt under its own distinctive name, every form that has been separately characterised, the question whether any particular form represents a species or a variety of a species can at present be decided in this country only as a matter of conjecture; for a knowledge of the life-history in all its stages is essential to the authoritative settlement of such questions; at the same time the evidently or apparently allied species are carefully grouped together, and the nature of the variety is indicated as closely as our present knowledge will allow."

With regard to the scope of the work we may again quote the preface as follows:—

"This book does not attempt a life-history of each or any of the insects. The time has not arrived for such a work. The details required for a life-history cannot be gathered until a knowledge of the nomenclature is far more widely diffused. It is simply designed as a handbook of reference, as complete as possible in itself, for the convenience of naturalists in the field, who have no access to libraries. Where necessary full extracts from the works not generally available are given, and where possible and advisable the description of the species are given in the words of the original describers, supplemented by any further details necessary to complete them. For the genera the admirable descriptions by Westwood in the 'Genera of Diurnal Lepidoptera' have been followed as closely as possible."

"The book will comprise detailed descriptions of every genus and species known to occur within the limits of India, British Burmah, and Ceylon, and short descriptions will be added in smaller type of species from neighbouring countries on the border, such as Malacca, Siam, Yunnan, Tibet, South Turkestan, Afghanistan, and Beluchistan, which, though not yet recorded from within Indian limits, may very probably subsequently be found to occur within our border."

If the authors mean to follow out this course it is to be hoped that their descriptions will be of a comparative and not of a general nature. Nothing can be more laborious, more unsatisfactory, and often more useless than wading through long descriptions, when a few words indicating in what character the species in question differs from its nearest allies, are often far more useful. It is just because authors have in many cases been unwilling or unable to make this comparison that they have described species without good cause, and it is frequently found that when such comparison is attempted, the want of distinctive characters is shown at once, whereas in a long wordy description it may easily be concealed. In conclusion, we wish the book success and plenty of supporters, so that it may be completed quickly, and mark the commencement of a new era in Indian entomology.

H. J. ELWES

OUR BOOK SHELF

Winners in Life's Race; or the Great Backboned Family. By Arabella Buckley, Author of *Life and her Children*, &c. With Numerous Illustrations. (London: Edward Stanford, 1882.)

LIFE, the title of Miss Buckley's thoughtful work now before us would suggest, once it became materially existent, went ever forward, striving after diverse fashions to adapt her children to the best methods of fighting and winning. She felt her way onward in several directions, and in several of these she attained to a fair share of perfection, from shapelessness to symmetry, from a simpleness in structure to a wonderful differentiation thereof; from a mere manifestation of vitality to a high state of instinct, almost of intellect; but there was to all of these a limit all too speedily attained—and it is now plain that no arrangement of epidermis, or muscle, or nerve, no alteration of blood, or alimentary system could get the uppermost in the struggle. It was only with the appearance of a quite new structure—the back-bone of this volume—that Life felt she had acquired a new power, and those of her children who were thus endowed went on gallantly until, *Winners in the race*, they were left without a rival. The record of their humble beginning was still very incomplete but a few years ago, and there was no clue thereto. Now as the reader will learn in the clearest manner from chapter I., we know of such forms as the Lancelet, and those strange *Ascidia* who "once tried to be back-boned, and yet as they grew fell back into the lap of Invertebrates."

Commencing with these *Ascidia*, this new volume of Miss Buckley proceeds to tell of those "*Winners in Life's Race*," which are supposed to culminate in our very selves. It does this in a way that most young people and every fairly educated person can understand as well as with a carefulness in detail and a caution in the statement of facts, most pleasing and grateful to the advanced student of Nature. Ably as this little volume is written, and admirable as, in our mind, is the judgment shown in the selection of details, yet it hardly comes to us with that captivating freshness that made the author's story of "*Life and Her Children*" so welcome. Why this is so, we can scarcely suggest; but this record of the battle over, of the fight won, seems to have been the result of a more tiresome labour than the author's previously published records of those other legions which led on so steadily to what was but a forlorn hope. Perhaps this is because there is a wondrous charm surrounding the mysterious beginnings of life which is not felt in the same degree as we approach the consideration of those beings who would seem to be the final product of life's genesis. Still, nothing that we thus write about the contrast between these volumes can lead us for a moment to overlook the fact that we know of no book in our language, which for the general reader approaches this, as an introduction to those animals (fish, reptiles, birds, and mammals) to whom the victory in life's race has been vouchsafed.

E. P. W.

LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]

[The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to ensure the appearance even of communications containing interesting and novel facts.]

Weather Forecasts

I AM glad that my letter on this subject has been the means of eliciting the letter of the Rev. W. Clement Ley, printed in your number of November 9. I have also received more than

one private communication; and by the courtesy of Mr. Scott I have been permitted to see all the evidence received at the Meteorological Office on the day preceding the great storm of October 24.

The painful conclusion is forced upon my mind that some of the difficulties which lie in the way of a surer and safer forecast of dangerous storms might be removed by a simple increase of expenditure upon the machinery available for meteorological purposes.

Mr. Ley writes: "On the whole, to the minds of many students of the subject it will appear rather strange that the Office, *with the materials at its disposal* [the italics are used by Mr. Ley] does not more often fail to furnish satisfactory warnings of the more serious of our gales. It is easy to say, in view of occasional failures, 'the system itself must be at fault'; it is still easier to reply 'Better it!' If the country cares enough for the welfare of 'fishermen and others' to do so, let it provide the necessary funds for a system of night telegrams, and, if possible, for a system of oceanic stations. If it does not, it must be content with things as they are."

Again, a private correspondent writes to me:—"The weather cannot be treated as though it went to bed at night and tucked itself in under a blanket of cumulus. It unfortunately does nothing of the kind; and while the director and his subordinates are quietly sleeping, atmospheric changes are going on with a rapidity which a constant influx of telegrams must afford the only means of meeting. Yet still in spite of all these we go on, satisfied with having only *two* reports sent in every twenty-four hours. The result is that every now and then a disastrous failure such as that of Tuesday *must* occur."

It must seem, therefore, that without the important assistance of a new class of observations, dependent upon the motions of the higher clouds, much might be done by such an extension of an existing system as common sense seems to demand. At present we appear to be acting upon a method somewhat parallel to that which would be adopted upon our railways, if the companies should send their signalmen to bed at 8 p.m., but with the night-traffic all the same. Collisions of the first magnitude would probably abound under such a system.

I write not as a meteorologist, but as a citizen. Surely if the position of things be such as has been described, and if an important improvement in the forecasting of storms could be ensured by the expenditure of a somewhat larger sum of public money, there could be no difficulty in bringing the matter in such a way under the notice of the Government as to secure the necessary funds. H. CARLISLE

Rose Castle, November 13

The Comet

It may perhaps interest you to know that a most brilliant comet has been visible here for about three weeks. I saw it for the first time on the morning of September 29; at 4.40 a.m. of that day it bore from a house on the ridge overlooking Victoria E. $\frac{1}{2}$ N. true (nearly), the nucleus being then about three degrees above the horizon; an imaginary line drawn from Rigel through Sirius met the nucleus.

The approximate length of the tail was nearly equal to the distance between Rigel and Betilguex, and its greatest breadth nearly equal to the distance between the two outer stars in the belt of Orion. The tail appeared brighter on the southern than on the northern side.

The following particulars, which may also prove of interest, were communicated to me by Capt. Metcalf, of the White Star Company's steam ship *Oceanic*.

"Monday, September 25—observed a large comet rise about 4.30 a.m., position at the time lat. $30^{\circ} 18' N.$, long. $128^{\circ} 40' E.$ September 26, at 5h. 17m. a.m., apparent time at ship (September 25, 9h. 01m. 13s. G.M.T.), altitude of comet, $7^{\circ} 20'$, distance from Sirius $63^{\circ} 21'$, tail extending nearly in a line from sun to Orion's belt., lat. $27^{\circ} 52' N.$, long. $124^{\circ} 10' E.$ September 27 (at 9h. 02m. G.M.T. September 26), comet's distance from Sirius $62^{\circ} 32'$. At 5h. 32 a.m., altitude of comet $13^{\circ} 22'$, bearing true S. $80^{\circ} E.$, lat. $25^{\circ} 16' N.$, long. $119^{\circ} 56' E.$, tail about 7° to 8° long. Comet rose bearing S. $86^{\circ} E.$ (true). September 28—distance from Sirius $61^{\circ} 49'$. October 3 (in the Victoria Harbour)—distance of comet from Sirius $58^{\circ} 43'$."

As the comet is still visible I may possibly be able to give you some further information about it by next mail.

The following extract is from the *China Mail* of the 7th inst.:—

A Melbourne de-patch, dated September 16, says—"The comet is now extremely bright, being visible through the telescope at noon, a circumstance unprecedented in the experience of the officers of the observatory."

If it is not trespassing too much on your time I should be very much obliged if you would kindly inform me what observations would be useful (which could be taken by an ordinary sextant) should we be visited by another comet.

In conclusion I may add that for the past week the weather has been unusually hot, and although the barometer has fluctuated considerably, no atmospheric disturbance has taken place.

According to M. Dechevrens, S.J., Director of the Zi-ka-wei Observatory, no less than *twenty* typhoons visited the China and Japan seas last year, but up to date of the present year only *three* have been reported.

Hong Kong, October 9

J. P. McEWEN, R.N.,
Assistant Harbour Master

I THINK there must have been some mistake about Major J. Herschel's observation, as recorded in *NATURE*, vol. xxvii. p. 5. As other observers have shown, the comet appears quite bright in moonlight. On the morning following his observation I was perhaps as much astonished as he was, only in the opposite direction; for I was very much surprised to find then (the 31st ult., at 5 a.m.), that the tail was longer than on any other occasion when I have seen it, viz. 33° . The following observations will also show the brightness of the comet in moonlight and twilight. On the 26th, at 5.25 a.m., nine hours before full moon, and in brightish twilight, the tail was visible through fog and thin cloud to a distance of $13\frac{1}{2}^{\circ}$. On the 29th, at 5.37 a.m., it was fully 23° long. This morning, at 6.9 a.m., in bright twilight, it was very faint, but still above 18° long. I think Major Herschel cannot have looked low enough down, or his view must have been otherwise obstructed.

The wisp, or horn, that he represents on the 23rd, was certainly a very striking feature at that time. Though not exactly like the drawing in vol. xxvi. p. 622, it was nevertheless very definite, and part of it was brighter than the adjacent part of the comet between it and the head. There appeared that morning to be also two other knots of light, much less conspicuous—one almost a continuation of the "horn," following it, and a little further north; the other, in the *n* branch of the "fish-tail."

Sunderland, November 7

T. W. BACKHOUSE

P.S. November 8.—The "horn" was this morning still a marked feature of the comet, though much less definite than formerly. Its origin (at the point where it begins from the northern branch) is still brighter than the neighbouring portions of the tail for a considerable distance in all directions. It occurs to me that this comet offers a very favourable opportunity of testing theories of the motions of tails; its features are so definite that if careful observations are, and have been, made of the positions of different points, they must throw much light on the subject. T. W. B.

ON the 10th inst., at 5 a.m., the length of the nucleus was $110''$, its breadth $12''$, and its position angle $112^{\circ} 5'$. The length seems fast increasing judging from previous measures. The tail was still about 15° long, but the first glimpse of daylight completely masked it. GEO. M. SEABROKE

Temple Observatory, Rugby, November 14

THE great comet was again a magnificent object in our south-eastern sky, at 5.10 this morning. The startlingly sharp definition of October 23 had given place to a softer outline; but the apparent length of the tail was at least as great, and the nucleus surprisingly bright, with a distinct scintillation, even in comparison with two near stars. Major J. Herschel's experience of finding himself gazing at the comet without seeing it, in a clear sky, differs from mine, as I have on two occasions, since October 23, seen it perfectly visible, though wan, in bright moonlight, and when the sky at that elevation above the horizon was not free from haze. On October 23 I saw the strong apparent shadow spoken of by one of your correspondents, but here it was much blacker below the bright convex line of the tail than between the cleft at the end of clear definition. It did not seem to me the effect of contrast merely; but like that blackness through which the stars shone darkly in the recent southward display of aurora borealis.

Bregner, Bournemouth, November 10

HENRY CECIL